

SYSTEM AND METHOD FOR BLUETOOTH DISTRIBUTED GLOBAL OPTIMIZATION

ABSTRACT OF THE INVENTION

5 A system and method are presented for actively evaluating
and adjusting device energy consumption in a personal area network
(PAN). The method comprises: polling devices in the PAN to determine
respective energy metrics; and, establishing network communications
between devices using the energy metrics. More specifically, a master
10 device establishes network communications rules between the devices as a
result of the polling activity. The master device identifies energy metrics
including the battery charge status for devices powered by battery and
device link energy metrics associated with network link communication
operations, determines the priority of operation for the devices, and
15 optimizes device battery life in response to the energy metrics and the
priority of operation for the devices. In a specific example of the
invention, a Bluetooth network, the method comprises: establishing a
piconet with one device functioning as a master device and at least one
other device functioning as a slave device; polling devices to determine
20 respective energy metrics; the master device identifying energy metrics
including the battery charge status and device link energy metrics; the
master device determining the priority of operation for the devices; the
master device optimizing device battery life in response to the energy
metrics and the priority of operation for the devices by modifying link
25 states between devices, the link state including device scan rate, device
mode setting, and device network role.